



# C06 0603



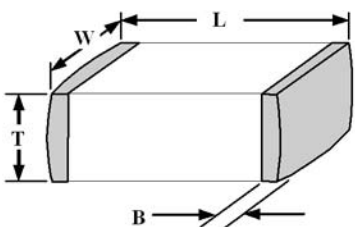
## FUNCTIONAL APPLICATIONS

DC Blocking  
Amplifier Matching Networks  
VCO Frequency Stabilization  
Filtering and Diplexers  
Antenna Matching

## BENEFITS

Stable TC  
EIA 0603 Case Size  
SMD Compatibility  
-55 to +125 °C Operating Range

## Mechanical Specifications



| Product Code | Body Dimensions               |                                |                          | Termination Code, Band Dimension and Material |                                                     |                          |
|--------------|-------------------------------|--------------------------------|--------------------------|-----------------------------------------------|-----------------------------------------------------|--------------------------|
|              | Length (L)                    | Width (W)                      | Thickness (T)            | Code                                          | Band (B)                                            | Material                 |
| C06          | .063" ± .009"<br>(1.6 ± 0.23) | .031" ± .008"<br>(0.80 ± 0.20) | .031" Max<br>(0.80) Max. | Z                                             | .010" + .010"<br>- .005"<br>(.254 + .254<br>- .127) | Ni Barrier, Tin Plate    |
|              |                               |                                |                          | S                                             |                                                     | Ni Barrier, Au Flash     |
|              |                               |                                |                          | P                                             |                                                     | AgPd Termination         |
|              |                               |                                |                          | U                                             |                                                     | Ni Barrier, Solder Plate |

Laser Markings available in Horizontal orientation only, Code L.  
The MS material system is available in Z termination only.  
U termination is not available in the UL material system.

## Capacitance Table

| C06 Capacitance Values |          |                  |                |          |          |                  |                |          |          |                  |                |          |          |                  |                 |
|------------------------|----------|------------------|----------------|----------|----------|------------------|----------------|----------|----------|------------------|----------------|----------|----------|------------------|-----------------|
| CAP CODE               | CAP (pF) | Cap Tol.         | Rated WVDC     | CAP CODE | CAP (pF) | Cap Tol.         | Rated WVDC     | CAP CODE | CAP (pF) | Cap Tol.         | Rated WVDC     | CAP CODE | CAP (pF) | Cap Tol.         | Rated WVDC      |
| 0R1                    | 0.1      | A<br>B<br>C<br>D | 250V<br>Code 9 | 0R9      | 0.9      | A<br>B<br>C<br>D | 250V<br>Code 9 | 3R9      | 3.9      | A<br>B<br>C<br>D | 250V<br>Code 9 | 240      | 24       | F<br>G<br>J<br>K | 250V*<br>Code 9 |
| R15                    | 0.15     |                  |                | R95      | 0.95     |                  |                | 4R3      | 4.3      |                  |                | 270      | 27       |                  |                 |
| 0R2                    | 0.2      |                  |                | 1R0      | 1.0      |                  |                | 4R7      | 4.7      |                  |                | 300      | 30       |                  |                 |
| R25                    | 0.25     |                  |                | 1R1      | 1.1      |                  |                | 5R1      | 5.1      |                  |                | 330      | 33       |                  |                 |
| 0R3                    | 0.3      |                  |                | 1R2      | 1.2      |                  |                | 5R6      | 5.6      |                  |                | 360      | 36       |                  |                 |
| R35                    | 0.35     |                  |                | 1R3      | 1.3      |                  |                | 6R2      | 6.2      |                  |                | 390      | 39       |                  |                 |
| 0R4                    | 0.4      |                  |                | 1R5      | 1.5      |                  |                | 6R8      | 6.8      |                  |                | 430      | 43       |                  |                 |
| R45                    | 0.45     |                  |                | 1R6      | 1.6      |                  |                | 7R5      | 7.5      |                  |                | 470      | 47       |                  |                 |
| 0R5                    | 0.5      |                  |                | 1R8      | 1.8      |                  |                | 8R2      | 8.2      |                  |                | 510      | 51       |                  |                 |
| R55                    | 0.55     |                  |                | 2R0      | 2.0      |                  |                | 9R1      | 9.1      |                  |                | 560      | 56       |                  |                 |
| 0R6                    | 0.6      |                  |                | 2R2      | 2.2      |                  |                | 100      | 10       |                  |                | 620      | 62       |                  |                 |
| R65                    | 0.65     |                  |                | 2R4      | 2.4      |                  |                | 120      | 12       | F<br>G<br>J<br>K |                | 680      | 68       |                  |                 |
| 0R7                    | 0.7      |                  |                | 2R7      | 2.7      |                  |                | 150      | 15       |                  |                | 750      | 75       |                  |                 |
| R75                    | 0.75     |                  |                | 3R0      | 3.0      |                  |                | 180      | 18       |                  |                | 820      | 82       |                  |                 |
| 0R8                    | 0.8      |                  |                | 3R3      | 3.3      |                  |                | 200      | 20       |                  |                | 101      | 100      |                  |                 |
| R85                    | 0.85     |                  |                | 3R6      | 3.6      |                  |                | 220      | 22       |                  |                |          |          |                  |                 |

\*MS capacitors in the cap range 36pF to 47pF are 150V rated, Code 8.

Cap values in **red** are available in MS only, in **blue** available in UL, CF, and AH only.

## Electrical Specifications

| Dielectric Material Code | Temperature Coefficient (ppm/°C Maximum) | Dissipation Factor (% @ 1MHz Maximum) | Dielectric Withstanding Voltage |                   | Insulation Resistance (MΩ Minimum) |                 | Aging | Piezoelectric Effects | Dielectric Absorption |
|--------------------------|------------------------------------------|---------------------------------------|---------------------------------|-------------------|------------------------------------|-----------------|-------|-----------------------|-----------------------|
|                          |                                          |                                       | Voltage Rating (Volts)          | DWV (Volts)       | @ +25°C                            | @ +125°C        |       |                       |                       |
| CF                       | 0 ± 15                                   | 0.05                                  | 250                             | 625               | 10 <sup>6</sup>                    | 10 <sup>5</sup> | None  | None                  | None                  |
| UL                       | 0 ± 30                                   | 0.05                                  | 250                             | 625               | 10 <sup>5</sup>                    | 10 <sup>4</sup> |       |                       |                       |
| MS                       | 0 ± 30                                   | 0.05                                  | 250<br>100<br>50                | 625<br>250<br>125 | 10 <sup>5</sup>                    | 10 <sup>4</sup> |       |                       |                       |

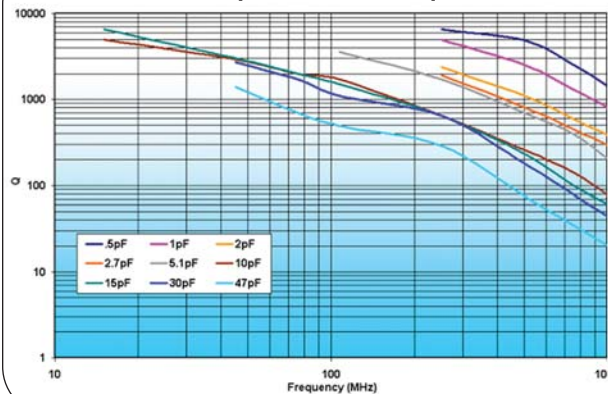
| Tolerance Codes |           |
|-----------------|-----------|
| Code            | Tolerance |
| A               | ± 0.05pF  |
| B               | ± 0.10pF  |
| C               | ± 0.25pF  |
| F               | ± 1%      |
| G               | ± 2%      |
| J               | ± 5%      |
| K               | ± 10%     |

Dielectric Laboratories

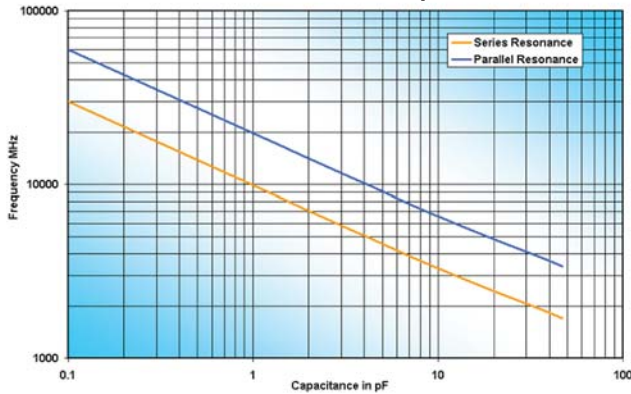


# C06 0603

## Q vs. Capacitance at Frequencies



## C06 Resonance vs. Capacitance



### C06 ENGINEERING KIT

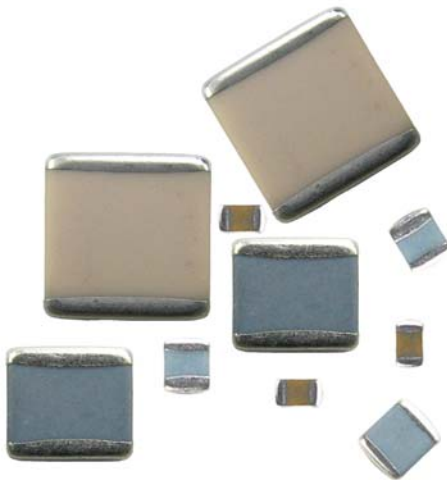
20 Pieces Each of 23 Values

| CODE         | CAP          |
|--------------|--------------|
| 0R3          | 0.3pF        |
| 0R5          | 0.5pF        |
| 1R0          | 1.0pF        |
| 1R2          | 1.2pF        |
| 1R5          | 1.5pF        |
| 1R8          | 1.8pF        |
| 2R0          | 2.0pF        |
| 2R2          | 2.2pF        |
| 2R7          | 2.7pF        |
| 3R3          | 3.3pF        |
| 3R9          | 3.9pF        |
| 4R7          | 4.7pF        |
| 5R6          | 5.6pF        |
| 6R8          | 6.8pF        |
| 100          | 10pF         |
| 120          | 12pF         |
| 150          | 15pF         |
| 180          | 18pF         |
| 220          | 22pF         |
| 270          | 27pF         |
| 330          | 33pF         |
| 470          | 47pF         |
| 560          | 56pF         |
| 680          | 68pF         |
| 820          | 82pF         |
| 101          | 100pF        |
| C08BLBB1X5UX | 2400pF Block |

DLI reserves the right to substitute values as required. Customer may request particular cap value and material for sample kit to prove designs.

### C06 DESIGNER KIT

| KIT C | KIT D | KIT E |
|-------|-------|-------|
| 0R1   | 1R2   | 6R8   |
| 0R2   | 1R5   | 8R2   |
| 0R3   | 1R8   | 9R1   |
| 0R4   | 2R2   | 100   |
| 0R5   | 2R7   | 120   |
| 0R6   | 3R3   | 150   |
| 0R7   | 3R9   | 220   |
| 0R8   | 4R7   | 270   |
| 0R9   | 5R1   | 360   |
| 1R0   | 5R6   | 470   |



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[C06CFR55B-9UN-X1T](#) [C06CF3R6B-9UN-X1T](#) [C06CF0R4B-9UN-X1T](#) [C06CF220J-9UN-X1T](#) [C06CF1R5B-9UN-X1T](#)  
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[X1T](#) [C06CF0R7B-9ZN-X1T](#) [C06CF0R8B-9ZN-X1T](#) [C06CF3R9B-9ZN-X1T](#) [C06CF4R7B-9ZN-X1T](#) [C06CF5R6B-9ZN-](#)  
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[X1T](#) [C06CF1R0D-9ZN-X1T](#) [C06CF6R8D-9ZN-X1T](#) [C06CF200K-9UN-X1T](#) [C06CF1R0D-9UN-X1T](#) [C06CFR55D-](#)  
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[C06CFR25D-9UN-X1T](#) [C06CF3R0D-9UN-X1T](#) [C06CF330K-9ZN-X1T](#) [C06CF3R6D-9UN-X1T](#) [C06CFR45D-9UN-X1T](#)  
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